

Date: Thursday, 3/8/2007 1:14:58 PM  
 User: Kim Johnston

## Process Sheet

Customer	CU-DAR001 Dart Helicopters Services	Drawing Name	: BOLT
Job Number	: 31117		
Estimate Number	: 10372		
P.O. Number	: N/A	Part Number	: D312121
This Issue	: 3/8/2007	S.O. No.	: N/A
Prsht Rev.	: NC	Drawing Number	: D3121 REV D
First Issue	: N/A	Project Number	: N/A
Previous Run	: 30320	Drawing Revision	: D
Written By	: <u>HA</u>	Material	: N/A
Checked & Approved By	: <u>4/07/03.08</u>		
Comment	: Est. A 04.02.09 New issue KJ/DS		
Due Date : 4/5/2007 Qty: 20 Um: Each			

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	M303H0500	303 HEX BAR	
		Comment: Qty.: 0.0417 f(s)/Unit Total : 0.8340 f(s) 303 HEX BAR Material: AISI 303 SS 1/2" Hex Bar (M303H0.500) Batch: M102286	
2.0	HARDINGE	HARDINGE CNC LATHE SMALL	
		Comment: HARDINGE CNC LATHE SMALL 1-Turn D3121-21 2-Identify as D3121-21 3-Deburr break all sharp edges 0.005" to 0.010"	
3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE	
		Comment: INSPECT PARTS AS THEY COME OFF MACHINE	 DSP 07/04/21 20
4.0	QC8	SECOND CHECK	
		Comment: SECOND CHECK	 Er 07/04/23 XZC
5.0	PACKAGING 1	PACKAGING RESOURCE #1	
		Comment: PACKAGING RESOURCE #1 Identify and Stock Location: _____	 <u>Bob 07/04/24 (20)</u>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA:  Date: 07/01/24  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 3/8/2007 1:14:58 PM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BOLT

Job Number: 31117

Part Number: D312121

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC21

FINAL INSPECTION/W/O RELEASE



(20)

Comment: FINAL INSPECTION/W/O RELEASE

307/04/04

Job Completion



U B.L.04.24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	31117
Description: Bolt	Part Number:	D3121-21
Inspection Dwg: D3121      Rev: D		Page 1 of 1

# FIRST ARTICLE INSPECTION CHECKLIST

## X First Article      Prototype

Measured by:	DSP 07/04/21	Audited by:	SN	Prototype Approval:	N/A
Date:		Date:	07/04/21	Date:	N/A

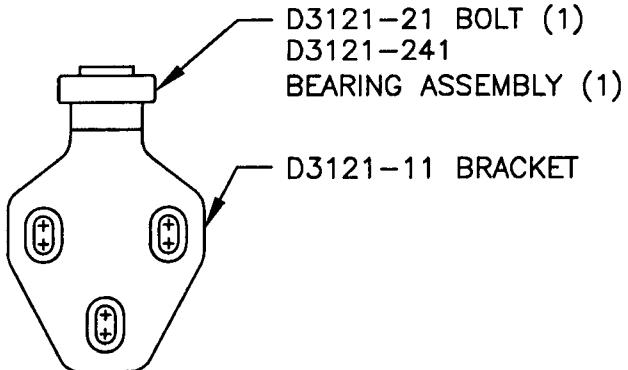
<b>Rev</b>	<b>Date</b>	<b>Change</b>	<b>Revised by</b>	<b>Approved</b>
A	04.02.27	New Issue	KJ/RF	
B	06.03.09	Dwg Rev. updated	KJ/JLM	
C	06.06.14	Dwg Rev. updated	KJ/JLM	<i>[Signature]</i>

**DART**

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D3121 REV. D SHEET 1 OF 10
DATE		TITLE SCALE
06.05.17		BRACKET ASSEMBLY 1:2
A	02.04.15	NEW ISSUE
B	03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD -141/-143/-144/-145/-146
C	04.02.17	ADD CLEARANCE; USE -241 BEARING
D	06.05.17	D3121-25 CAP WAS 1.024, NOW 1.000

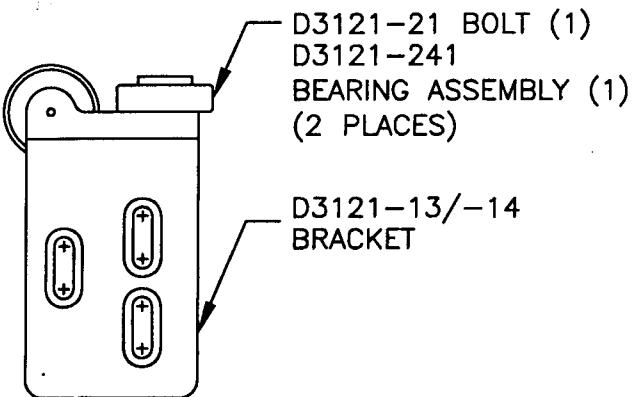
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06.06.02



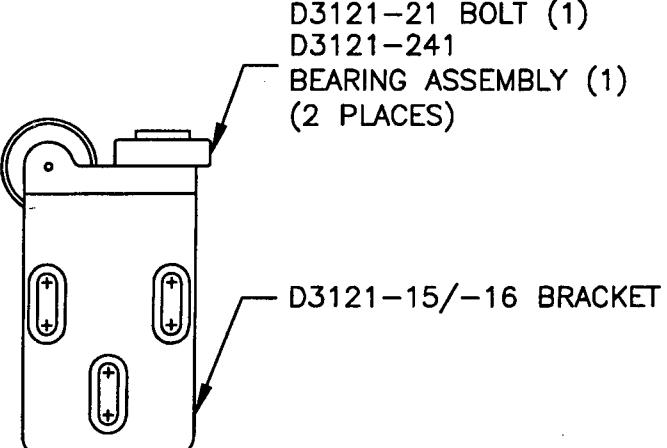
D3121-21 BOLT (1)  
D3121-241  
BEARING ASSEMBLY (1)

**D3121-041 BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23000-33)



D3121-21 BOLT (1)  
D3121-241  
BEARING ASSEMBLY (1)  
(2 PLACES)

**D3121-043 (SHOWN) / D3121-044 (OPPOSITE)**  
**BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23000-37/-38)



D3121-21 BOLT (1)  
D3121-241  
BEARING ASSEMBLY (1)  
(2 PLACES)

**D3121-045 (SHOWN) / D3121-046 (OPPOSITE)**  
**BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23000-35/-36)

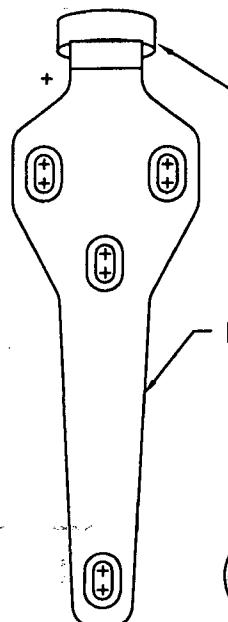
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WORK ORDER  
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		D3121	SHEET 2 OF 10
DATE		TITLE	SCALE
06.05.17		BRACKET ASSEMBLY	1:2



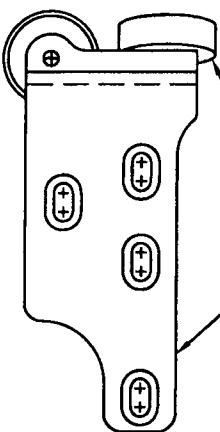
D3121-21 BOLT (1)  
D3121-241  
BEARING ASSEMBLY (1)

D3121-111 BRACKET

**D3121-141 BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23001-01)

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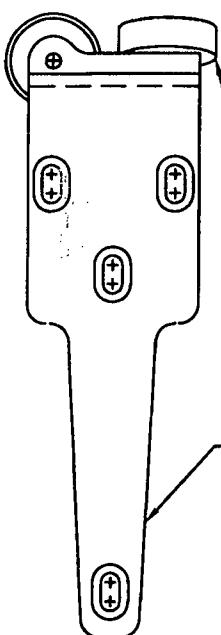
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D3121-21 BOLT (1)  
D3121-241 BEARING ASSEMBLY (1)  
(2 PLACES)

D3121-113/-114 BRACKET

**D3121-143 (SHOWN) / D3121-144 (OPPOSITE)  
BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23000-03/-04)



D3121-21 BOLT (1)  
D3121-241 BEARING ASSEMBLY (1)  
(2 PLACES)

D3121-115/-116  
BRACKET

**D3121-145 (SHOWN) / D3121-146 (OPPOSITE)  
BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23000-05/-06)

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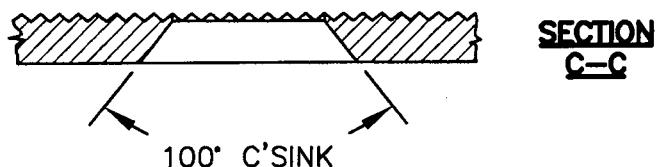
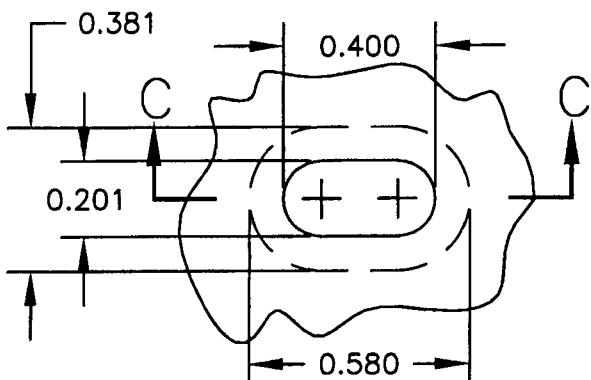
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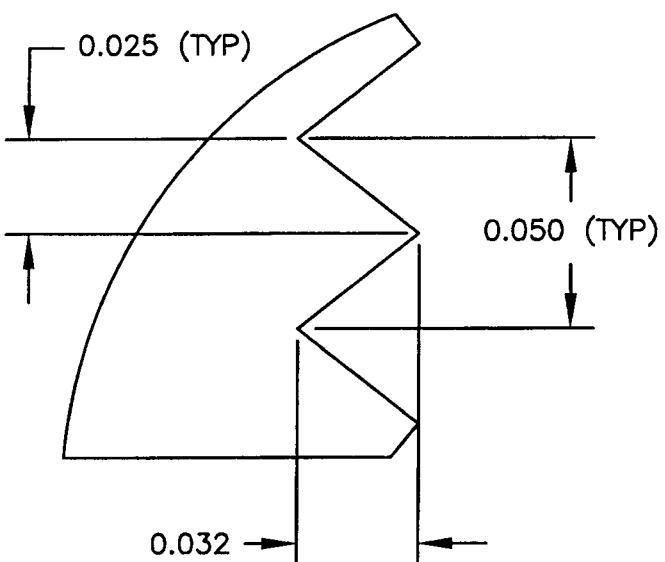
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DATE	06.05.17	REV. D SHEET 3 OF 10 TITLE SCALE BRACKET ASSEMBLY 1:1

**DETAIL A:**  
**SLOT DETAIL**  
SCALE 2:1  
VIEW ROTATED



**DETAIL B:**  
**RIDGE DETAIL**  
PARTIAL SECTION  
SCALE 1:20



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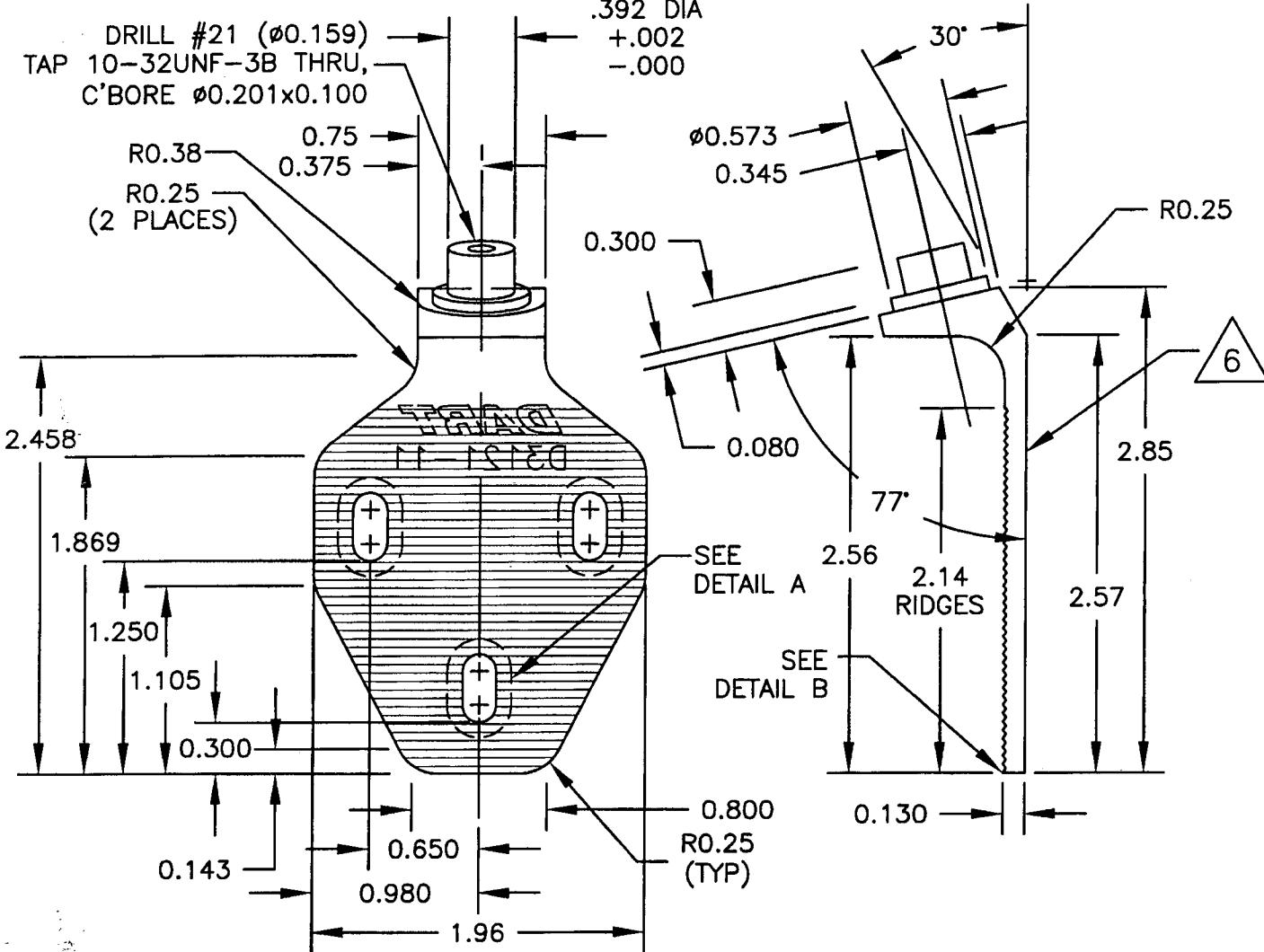
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		D3121	SHEET 4 OF 10
DATE	TITLE	SCALE	1:1
06.05.17	BRACKET ASSEMBLY		

**D3121-11 BRACKET**

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE = 150 ksi  
MIN YIELD TENSILE = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

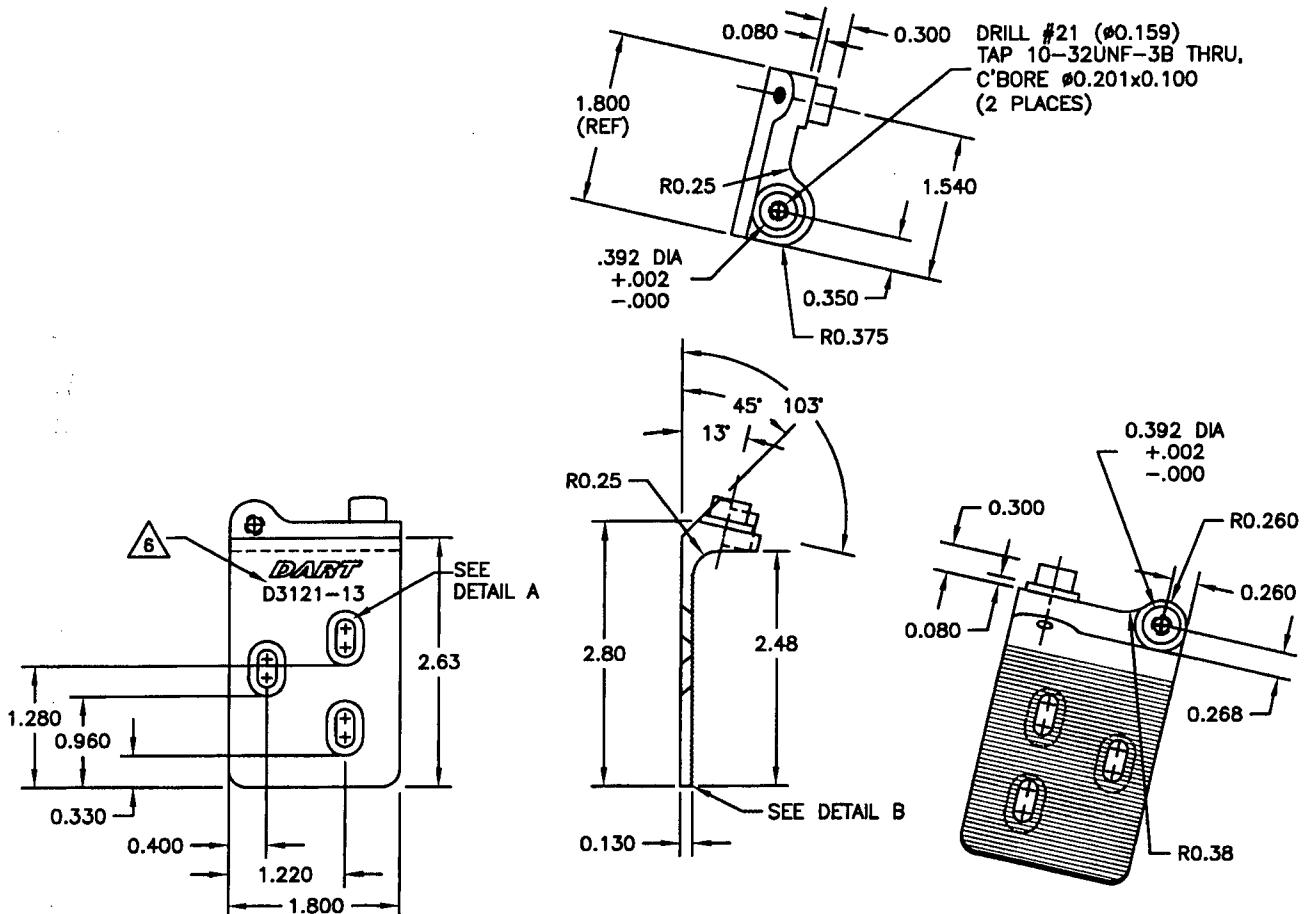
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DATE		REV. D SHEET 5 OF 10 TITLE <b>BRACKET ASSEMBLY</b> SCALE 1:2



**D3121-13 BRACKET (SHOWN)**  
**D3121-14 BRACKET (OPPOSITE)**

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)  
 MIN ULTIMATE TENSILE STRENGTH = 150 ksi  
 MIN YIELD TENSILE STRENGTH = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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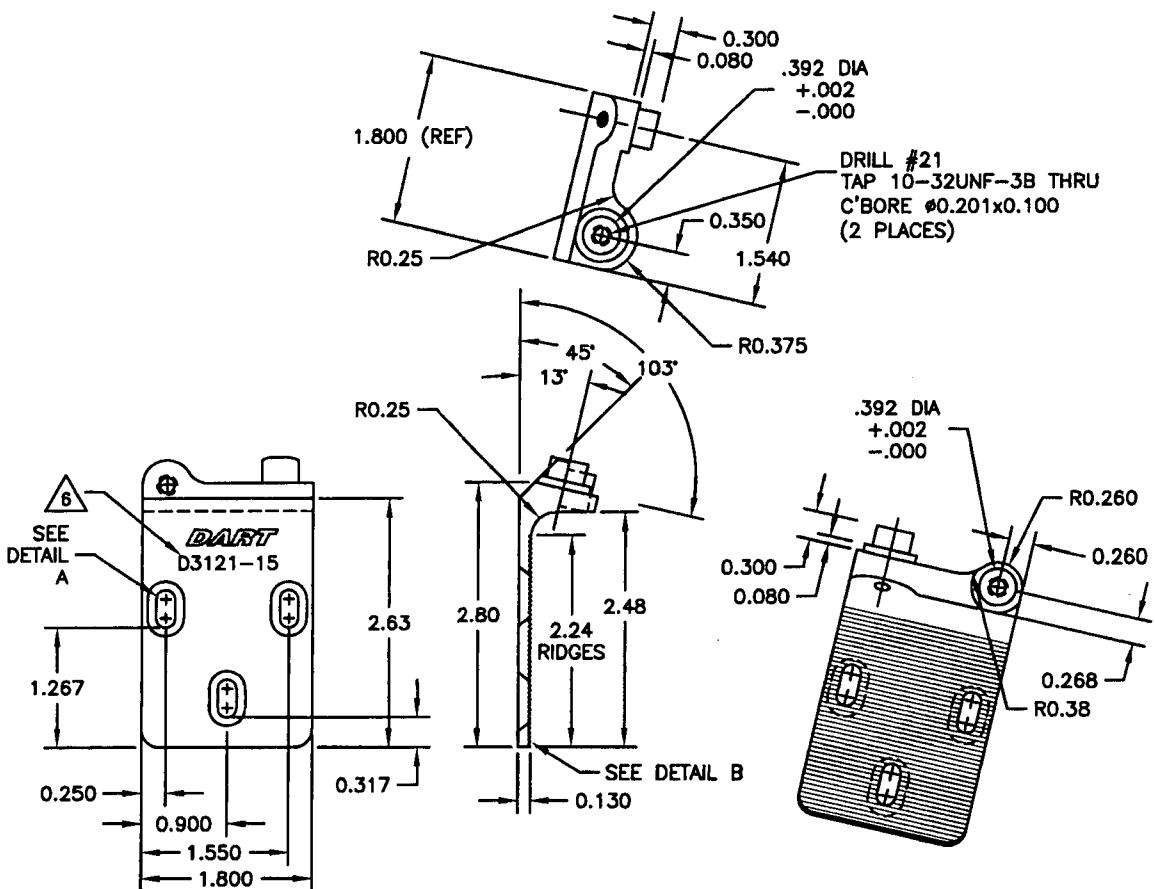
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DATE		REV. D SHEET 6 OF 10 TITLE SCALE 1:2 BRACKET ASSEMBLY



**D3121-15 BRACKET (SHOWN)**  
**D3121-16 BRACKET (OPPOSITE)**

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE = 150 ksi  
MIN YIELD TENSILE = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N AND LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

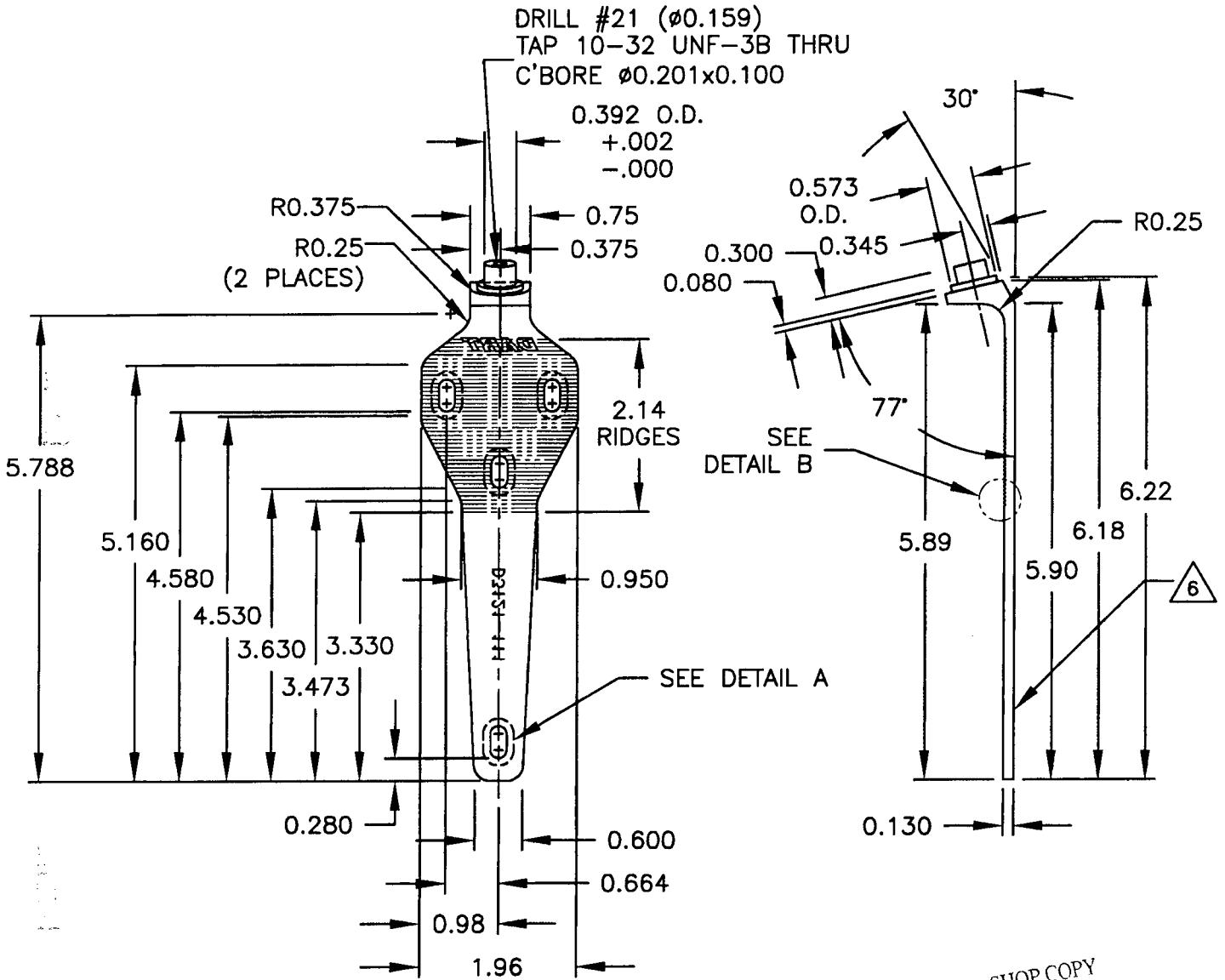
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DATE 06.05.17	TITLE BRACKET ASSEMBLY	SCALE 1:2	



D3121-111 BRACKET

- 1) REPLACES PREMIER P/N B32-23001-11
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M1)  
MIN ULTIMATE TENSILE = 150 ksi  
MIN YIELD TENSILE = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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06.06.02 ~~11~~

06-06-02 ~~aff~~

*[Signature]*

*Journal of Health Politics, Policy and Law*, Vol. 27, No. 4, December 2002  
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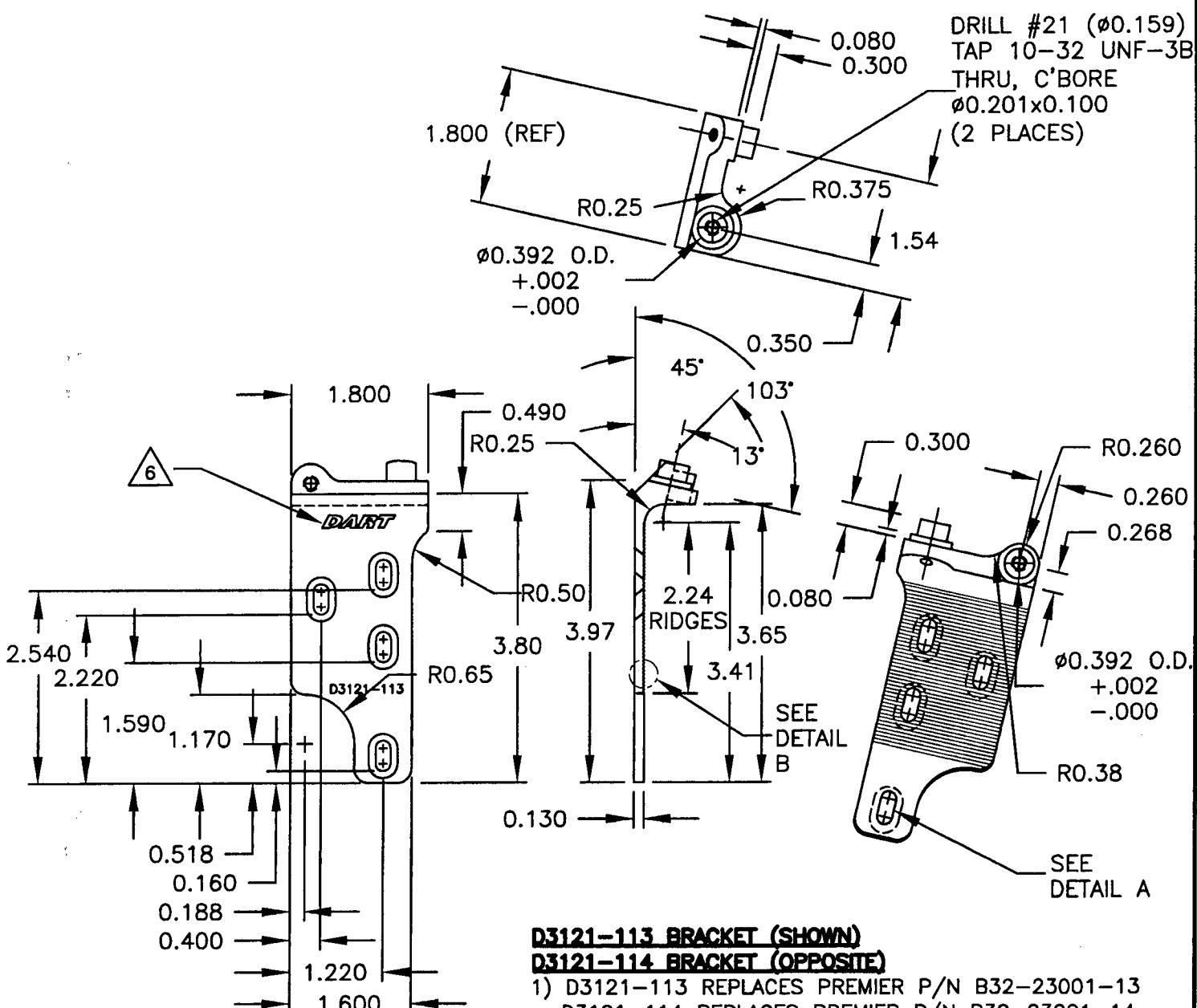
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DATE	06.05.17	TITLE BRACKET ASSEMBLY

REV. D

SHEET 8 OF 10

SCALE 1:2



**D3121-113 BRACKET (SHOWN)**  
**D3121-114 BRACKET (OPPOSITE)**

- 1) D3121-113 REPLACES PREMIER P/N B32-23001-13  
D3121-114 REPLACES PREMIER P/N B32-23001-14
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE STRENGTH = 150 ksi  
MIN YIELD TENSILE STRENGTH = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS  
OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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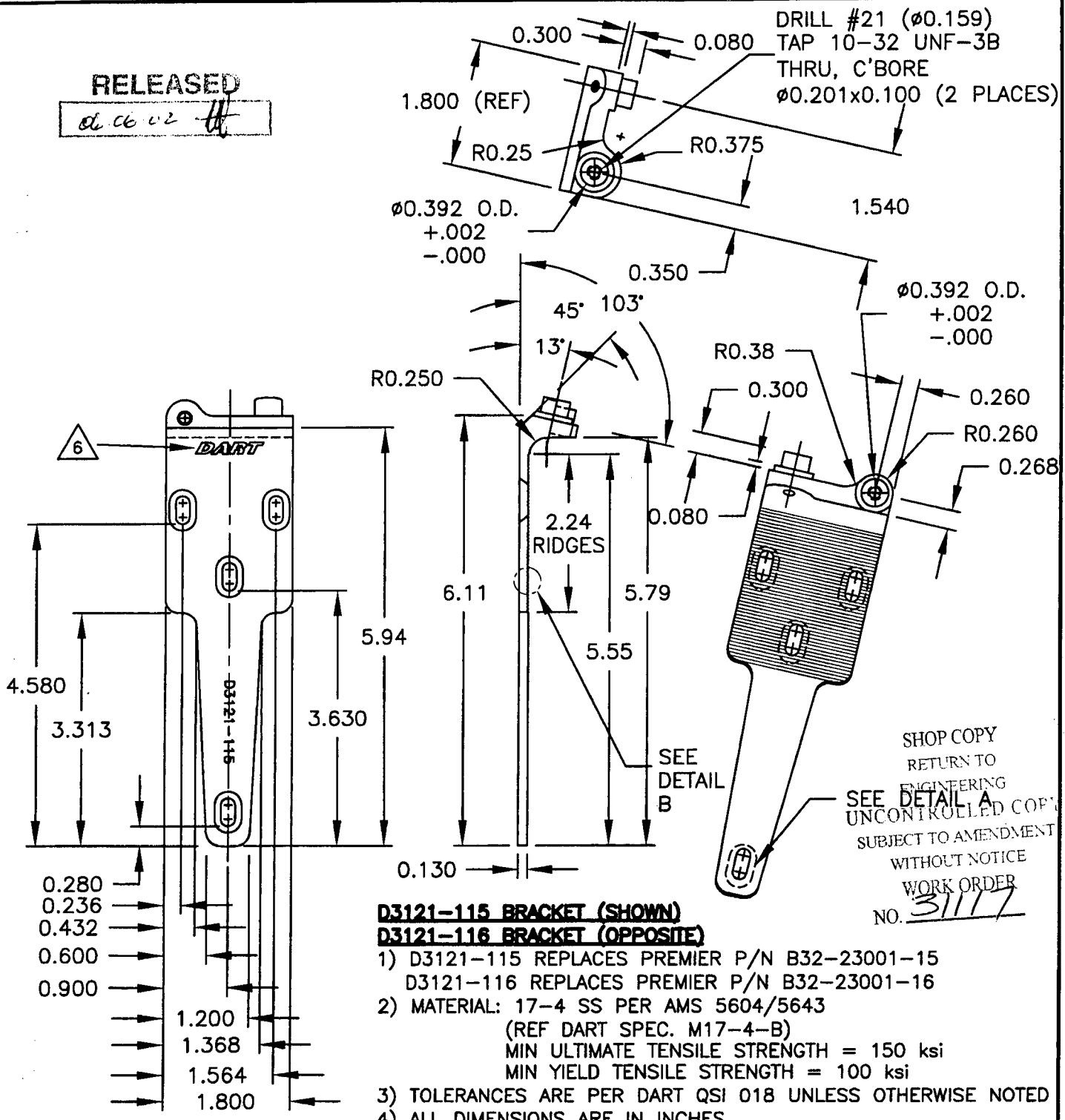
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SHEET 9 OF 10	D3121	TITLE	SCALE
DATE	04.02.18	BRACKET ASSEMBLY	1:2

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04.06.02

**D3121-115 BRACKET (SHOWN)****D3121-116 BRACKET (OPPOSITE)**

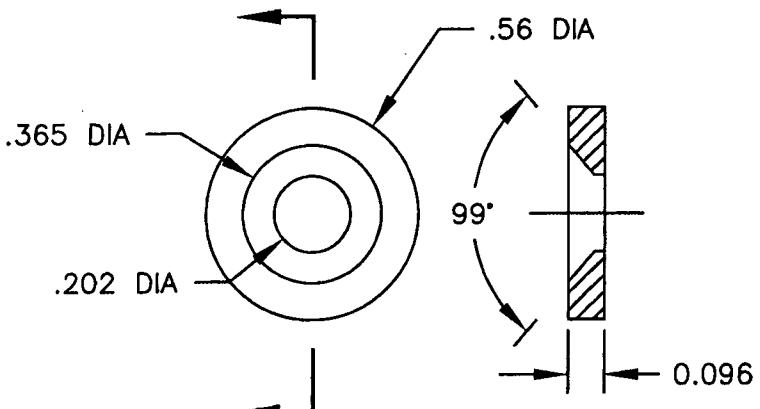
- 1) D3121-115 REPLACES PREMIER P/N B32-23001-15
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE STRENGTH = 150 ksi  
MIN YIELD TENSILE STRENGTH = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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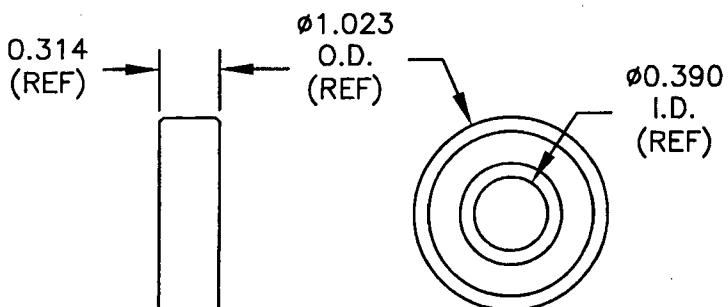
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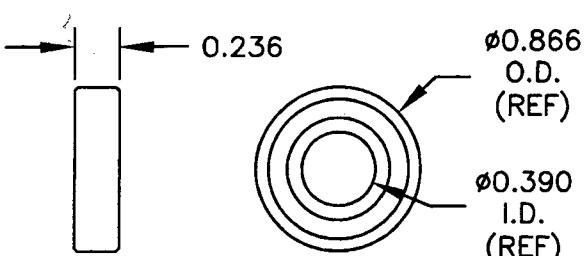
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CHECKED	APPROVED	DRAWING NO.	REV. D
		D3121	SHEET 10 OF 10
DATE	TITLE	SCALE	1:1
06.05.17	BRACKET ASSEMBLY		

**D3121-17 WASHER (SCALE 2:1)**

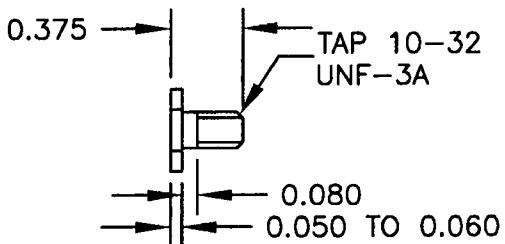
- 1) REPLACES PREMIER P/N B32-23001-17
- 2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

**D3121-19 BEARING (SCALE 1:1)**

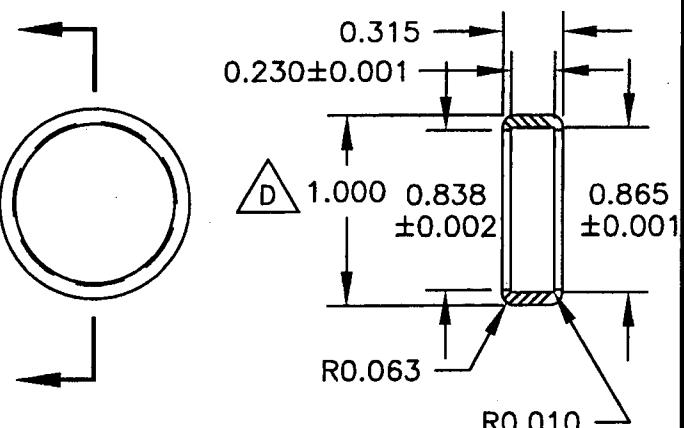
- 1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-2ZJ/EM  
FAFNIR P/N 9100KDD
- 2) ALL DIMENSIONS ARE IN INCHES

**D3121-23 BEARING (SCALE 1:1)**

- 1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z  
OR KML P/N 6900-2Z
- 2) ALL DIMENSIONS ARE IN INCHES

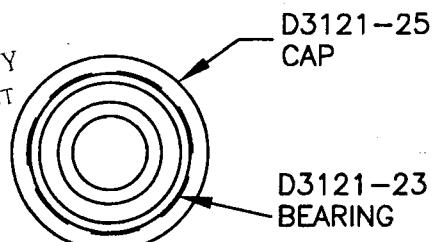
**D3121-21 BOLT (SCALE 1:1)**

- 1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

**D3121-25 CAP (SCALE 1:1)**

- 1) MATERIAL: DELRIN ROD, Ø1.25 (REF DART SPEC. M-DELRIN-R1.250)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

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**D3121-241 BEARING ASSEMBLY (SCALE 1:1)**